(c) The legal framework for contract farming under the State Agricultural Produce Marketing (Regulation) Acts will be quite helpful to the small farmers in securing better remuneration for their produce, particularly in backward areas/districts, including that of Uttar Pradesh, as, such arrangements would cover the price risk and also the production risk to a great extent. Contract Farming has the potential of combining small farmers' efficiency with economy of scale, utilizing corporate management skills, providing assured markets and reducing transaction costs in the value chain by ensuring vertical integration. Several national and multinational processors of fast food chains are increasingly entering into contract with the farmers to encourage them to cultivate farm products (fruit, vegetables, etc.) of the desired quality by providing them not only seeds and other inputs but also assured procurement of the produce at pre-decided prices. Such tie-ups have special significance for small and marginal farmers, who have small marketed surplus and do not have staying power. They may not individually be capable of investing in technology, but through self help groups or cooperatives, there could emerge a desirable institutional framework, through which farmers can suitably reap the benefits of contract farming arrangements. Contract farming is particularly useful for high value crops because it enables the corporates to associate with the farmers and helps in imparting the latest technological know how to them.

Rain based cultivation

†535. SHRI HARISH RAWAT: Will the Minister of AGRICULTURE be pleased to state:

(a) the percentage of area of cultivation based on rain water in the country and State-wise details of cultivation based on rain water;

(b) whether any action plan has been formulated by his Ministry to double the production capacity of cultivation based on rain water;

(c) if so, the details of assistance being provided to the States to execute this action plan by the end of this Five Year Plan?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI KANTI LAL BHURIA): (a) Out of the 141.34 million hectare of estimated net cultivated area, 55.88 million ha (40%) is irrigated and the remaining 85.46 million ha (60%) is rainfed. The State-wise net area sown, net irrigated area and rainfed area is given in the enclosed Statement *(See* below).

(b) and (c) The Government has accorded very high priority to the holistic and sustainable development of dryland/rainfed areas through integrated watershed management approach. Following programmes/schemes are being implemented by Government for sustainable development of rainfed areas.

Ministry of Agriculture

(i) National Watershed Development Project for Rainfed Areas (NWDPRA)

Ministry of Rural Development

(ii) Drought Prone Area Programme (DPAP)

(iii) Desert Development Programme (DDP)

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†Original notice of the question was received in Hindi.

The Working Group of the Sub-Committee of the National Development Council (NDC) on Agriculture and Related Issues on Dryland/Rainfed Farming System including Regeneration of Degraded/Waste Land, Watershed Development Programme, constituted by the Planning Commission has recommended development of 4 million ha area under NWDPRA, 10 million ha under DPAP and 5 million ha under DDP in the XI Plan with an estimated cost of Rs. 4,000 crores, Rs. 5,200 crores and Rs. 2,600 crores respectively.

Apart from above watershed development related schemes, Government of India have also initiated two major centrally sponsored schemes to benefit rainfed areas.

(a) National Horticulture Mission: The scheme is for development of horticulture duly ensuring end to end approach having backward and forward linkages covering research, production, post harvest management, processing and marketing. Provisional outlay of Rs. 8809 crores has been made for the XI Plan.

(b) Micro Irrigation: The scheme aims at judisious use of water resource by adopting efficient methods of application to save water and to increase water use efficiency. Provisional outlay of Rs. 3500 crores has been made for the XI Plan.

The Government has also taken new initiatives for improving agricultural production in the XI Five Year Plan by launching of new programmes. The important ones are:—

1. National Food Security Mission—This Mission has been launched with the objective to enhance the production of rice, wheat and pulses by 10,8 and 2 million tonnes respectively by the end of XI five year plan. It is being implemented in 16 States. Provisional outlay of Rs. 4883 crores has been made for the XI Plan.

2. Rastriya Krishi Vikash Yojana — This scheme has been launched to incentivize the States to increase the share of agriculture to the State Plans. The scheme aims at achieving 4% annual growth in agriculture sector during XI plan by ensuring a holistic development of agriculture and allied sectors. The scheme will be implemented based on the State and District Agricultural Plans suitable to the respective agro-climatic conditions. The funds are being provided to the States as additional central assistance as 100% grant by the Central Government. Under the scheme, the States have the freedom to develop and pursue activities on the basis of their priorities through State and District Agricultural Plans. An outlay of Rs. 25000 crores has been provided for the XI Plan.

3. National Rainfed Area Authority (NRAA) — To address the problems of farmers of rainfed areas, for bringing effective coordination, convergence and to provide the much-needed knowledge inputs regarding systematic up-gradation and management of country's dryland and rainfed agriculture, Government of India has set up the National Rainfed Area Authority (NRAA). This Authority is a two-tier structure. The first tier is the Governing Board chaired by the union Minister of Agriculture, whereas Minister, Rural Development is the Co-Chairman and the Ministers of Environment & Forests and Water Resources are the Members. The second tier Is the Executive Committee with Technical Experts, Subject Matter Specialists and the representatives of Stake Holder Minsitries as its Members, it is headed by the Chief Executive Officer of the NRAA. The Authority is an advisory, policy making and monitoring body mandated to prepare the perspective plan, outlining the National strategy and road map for holistic and sustainable development of rainfed farming areas. A Rainfed Area Development Programme has been planned for the XI Five year Plan with an outlay of Rs. 2500 crores.

Statement

Details of Geographical Area, Net Sown Area, Net Irrigated Area and Rainfed Area in the States and Union Territories

(Area in '000 Ha)

SL No.	State/UT	Geographical Area	Net Area		Rainfed
			Sown	Irrigated	
1	2	3	4	5	6
1.	Andhra Pradesh	27507	10410	4238	6172
2.	Arunachal Pradesh	8374	164	42	122
3.	Assam	7844	2734	170	2564
4.	Bihar	9416	5664	3462	2202
5.	Chhattisgarh	13519	4800	1151	3649
6.	Goa	370	141	23	118
7.	Gujarat	19602	9622	2994	6628
8.	Haryana	4421	3566	2938	628
9.	Himachal Pradesh	5567	550	102	448
10.	J&K	22224	748	310	438
11.	Jharkhand	7972	1769	164	1605
12.	Karnataka	19279	10031	2565	_7466
13.	Kerala	3886	2191	377	1814
14.	Madhya Pradesh	30825	14859	4735	10124
15.	Maharashtra	30771	17619	2975	14644
16.	Manipur	2233	140	65	75
17.	Meghayala	2243	230	59	171
18.	Mizoram	2108	188	16	102
19.	Nagaland	1658	333	65	268
20.	Orissa	15571	5845	1938	3907
21.	Punjab	5036	4250	4038	212
22.	Rajasthan	34224	16765	4520	11345
23.	Sikkim	710	95	17	78
24.	Tamil Nadu	13006	5172	2801	2371
25.	Tripura	1049	280	37	243
26.	Uttaranchal	5348	793	347	446
27.	Uttar Pradesh	24093	16812	12391	4421
28.	West Bengal	8875	5522	2376	3446
29.	A&N Island	825	38	0	38

1	2	3	4	5	6
30.	Chandigarh	11	2	1	1
31.	D & N Haveli	49	23	8	15
32.	Daman & Diu	11	4	1	3
33.	Delhi	148	29	29	0
34.	Lakshadweep	3	3	1	2
35.	Pondicherry	48	24	21	3
	TOTAL:	328726	141345	55876	85469

Systems to help improving food production

536. SHRIMATI N.P. DURGA: Will the Minister of AGRICULTURE be pleased to state:

(a) how the Geographic Information System, Remote Sensing, Global Position System, Simulation Modeling are helping in increasing the food production in the country;

(b) whether it is a fact that BARC has developed 29 improved varieties for commercial cultivation;

(c) if so, the details thereof; and

(d) how his Ministry is planning to go ahead in application of biosensors, biotechnology, nano-technology, etc., for improving the production of foodgrains in the country?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (SHRI KANTI LAL BHURIA): (a) These technologies having applications across diverse fields of resource characterization, land use planning, precision farming, crop forecasting, flood & drought monitoring etc. have helped increase agricultural production in the country.

(b) and (c) Yes, Sir. Using radiation induced mutation and cross-breeding, BARC has developed 29 improved varieties and released for commercial cultivation. These comprise 16 in oilseeds (12 groundnut, 2 soyabean and 2 mustard); 11 in pulses (4 blackgram, 5 greengram and 2 pigeonpea); and 1 each of rice and jute.

(d) The ICAR is developing improved cultivars/varieties with high yield potential, tolerance to biotic and abiotic stresses and better quality traits etc. through bio-technological interventions. There is proposal for establishing Institutes on Agricultural Biotechnology, Biotic and Abiotic Stress Management during Xlth Plan.

The nanotechnology has potential in enhancing resource use efficiency in terms of soil-water-nutrient-pesticide etc. through development of suitable nano-products and biosensors. Research initiatives to this direction are being made to harness the potential.

Suicides by farmers

537. SHRI N.R. GOVINDARAJAR: Will the Minister of AGRICULTURE be pleased to state:

(a) whether the cases of suicide by farmers are increasing rapidly in various parts of the country despite the rehabilitation packages;